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10/761,858

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Alain Charles Louis Briancon

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EXAMINER

DESIR, PIERRE LOUIS

ART UNIT

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2617

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/761,858	<b>Applicant(s)</b> BRIANCON ET AL.	
	<b>Examiner</b> Pierre-Louis Desir	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 March 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 7-11, 14 and 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-11, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed on 03/15/2007 have been fully considered but they are not persuasive.
2. Applicants argue on page 8 of the Remarks that Mortensen is restricted to a single response to a single event. To support his argument, Applicants rely on Mortensen disclosure in paragraph 30, which state, "congestion situation."

Examiner respectfully disagrees. Mortensen discloses that a congestion situation can occur within a variety of scenarios (see paragraph 29). Thus, although Mortensen discloses a congestion situation, each scenario of a congestion situation is an event. In this case, Mortensen discloses that the congestion situation can occur within a variety of scenarios. Furthermore, Mortensen discloses that network comprises means for selecting a first or a second interleaving length, and that the selection depends on network traffic (see abstract). As such, Mortensen discloses a network, which can receive a plurality of events (i.e., congestion situation that can occur within a variety of scenarios) and selecting a plurality of algorithms (i.e., the network selects a first or a second interleaving length).

Examiner is unclear to how the receiving step and the selecting step are being performed. Applicants have not disclosed whether or not the network receives a plurality of events at the same time or one at a time. Also Applicants have not disclosed that the network selects a plurality of algorithms at the same time (i.e., together) or one at a time to resolve the events that were received. Examiner respectfully reminds Applicants that claims are broadly interpreted

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(within reason) by Examiner. The claims in the present application broadly recite the steps of the method. As a result, Examiner broadly interpreted the claims.

Applicants argue on page 9 of the Remarks that Vucetic does not teach or suggest, “determining a subset of the selected RRM algorithms to be executed to achieve an optima result to resolve the event received, wherein the subset of RRM algorithms is based on results in the analyzing steps.” To support this argument, Applicants state that in Vucetic, the algorithms reside in the switch and are selected on at a time.

In response, nowhere in the claim’s language is there a disclosure of how the algorithms are being selected (i.e., together, one at a time). Also, Examiner is not clear in Applicants disclosure of “implemented” and “residing” since nowhere in the claim is there a reference of algorithms being implemented. In addition, because the algorithms reside in the in the switch is irrelevant to the algorithms being invoked, selected. Further, Vucetic discloses throughout section 7.2 that a multi-algorithm dynamic channel allocation mechanism consists of several channel allocation algorithms residing at the same time in the switch of a cellular network. The algorithms are selected so that each one of than provides a significant performance advantage in comparison to the others under the given traffic and interference conditions. An algorithm becomes active in the network when the actual measured traffic and interference conditions indicate that this algorithm would provide the best performance in comparison to the other algorithms implemented in the switch. The algorithm becomes passive when the actual measured traffic and interference conditions change so that another algorithm is expected to provide a better performance. Only one of the algorithms can be active in the network at a time.

As can be seen above, Vucetic discloses of algorithms being compared (i.e., analyzed) so the one that could provide the best performance be selected.

Regarding claim 9, Applicants discloses additional disagreement with Examiner and submit that the feature pf “preparing a set of predicted measurements for use by the other RRM algorithms” because Mortensen only refers to “parameter sets” which are exemplified as interleaving time lengths, wherein each of the various possible values of the parameters is fixed and predetermined (see remarks page 10) not predicted by an algorithm.

Examiner respectfully disagrees. Mortensen discloses that the interleaving length is increased in response to the detection of a congestion situation. The interleaving length of a service is dynamically adapted to a certain congestion situation of the communication system. when a congestion situation occurs the interleaving length is increased and power is reduced in order to make more efficient usage of the available bandwidth. In a preferred embodiment of the invention the standard interleaving length is 10 or 20 ms in a normal network traffic situation. In case of congestion the interleaving length is increased to for example 40 or 80 ms (see paragraphs 14-16). Mortensen also discloses that if the network becomes congested a longer interleaving length of T.sub.2 is selected whereas in the normal non-congested situation the shorter interleaving length T.sub.1 is selected (see paragraph 33). As can be seen, different interleaving lengths (i.e., shorter or longer) are predicted.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 7, 9, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mortensen et al. (Mortensen), Pub. No. US 2003/0096608 in view Vucetic et al. (Vucetic), "Implementation and Performance Analysis of Multi-Algorithm Dynamic Channel Allocation in a Wideband Cellular Network", 1996 IEEE International Conference on Communications (ICC), Vol. 3, June 1996, pp. 1270-1274.

Regarding claim 1, Mortensen discloses a method for scheduling radio resource management (RRM) algorithms on a radio link by coordinating the RRM algorithms (see page 2, paragraph 24), comprising the steps of: receiving a plurality of events (i.e. a congestion situation than can occur within a variety of scenarios is detected by the RNC) (see fig. 1, page 2, paragraphs 29-30); selecting a plurality of RRM algorithm to resolve the events, wherein the RRM algorithms are selected based on the events received (i.e. in response to the detection of the congestion, and after an inherent evaluation, the RNC makes a selection) (see fig. 1, abstract, and page 2, paragraphs 30 and 33).

Although, Mortensen discloses a method as described above, Mortensen does not specifically disclose a method further comprising the steps of invoking the selected RRM algorithms; analyzing results of the invoked RRM algorithms obtained in the invoking step; determining a subset of the selected RRM algorithms to be executed to achieve an optimal result to resolve the **event (i.e., being interpreted as one event)** received, wherein the subset of RRM algorithms is based on results obtained in the analyzing step; executing the subset of the determined RRM algorithms, and placing the radio link into a busy state such that only one RRM

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algorithm can be executed and operate on the radio link at a time, the radio link remaining in the busy state for the duration of an RRM algorithm's execution.

However, Vucetic discloses a method comprising the steps of invoking the selected RRM algorithms (if the algorithm transition is needed, the switch activates the new algorithm from multiple algorithms) (see section 7.2); analyzing the results of the invoked RRM algorithms (i.e., the algorithms are selected so that each one of them provides a significant performance advantage in comparison to the others under the given traffic and interference conditions) (see sections 4 and 7.2); determining a subset of the selected RRM algorithms to be executed to achieve an optimal result to resolve the event received, wherein the subset of RRM algorithms is based on the results of the analyzing step (i.e., to use a multi-algorithm dynamic channel allocation mechanism includes several channel allocation algorithms implemented at the same time in *the* switch of a cellular network. The algorithms are selected so that each one of them provides a significant performance advantage in comparison to the others under the given traffic and interference conditions) (see sections 4 and 7.2); executing the subset of the determined RRM algorithms (i.e., an algorithm becomes active in the network when the actual measured offered load and interference conditions indicate that this algorithm would provide the best performance in comparison to the other algorithm implemented in the switch) (see sections 4 and 7.2), and placing the radio link into a busy state such that only one RRM algorithm can be executed and operate on the radio link at a time, the radio link remaining in the busy state for the duration of an RRM algorithm's execution (i.e., from the Applicant's specification, it appears that the placing of the radio link into a busy state only applies to preventing **other algorithms from being executed**. With Vucetic disclosure in section 7.2, that "**only one of the algorithms**

can be active in the network at a time”, it would have been obvious to one skilled in the art that the other algorithms would be able to be executed while the selected algorithm is active. Therefore, the network would be in the busy state when it comes to the other not-selected algorithms).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings as described to arrive at the claimed invention. A motivation for doing so would have been to provide a method wherein the algorithm becomes passive when the traffic and interference conditions change so that another algorithm is expected to provide better performance.

Regarding claim 2, Mortensen discloses a method (see claim 1 rejection) including preparing a set of predicted measurements (i.e. parameter set) for use by the other RRM algorithms in the subset (see page 2-3, paragraph 34).

Regarding claims 7 and 14, Mortensen discloses a method as described in claims 2 and 9, wherein the set of predicted measurements (i.e. parameter set) (see paragraph 27) is stored in a centralized database (i.e. server) (see paragraph 27).

Regarding claim 9, Mortensen discloses a method for scheduling radio resource management (RRM) algorithms by coordinating RRM algorithms (see page 2, paragraph 24), comprising the steps of: receiving an event wherein at least one RRM algorithm is associated with event (see fig. 1, page 2, paragraph 30); performing the RRM algorithm on the radio link (i.e. Mortensen discloses a way of controlling load (congestion) on communication network by rejecting communication request through forbidding the mobile station to access the channel for some specified length of time; preparing a set of predicted measurements for use by the other



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RRM algorithms (see page 2-3, paragraphs 34 and 37); and placing the radio link into an idle state, whereby the radio link is accessible by any RRM algorithm (i.e. when the congestion situation, for instance, is over, the RNC select an interleaving length to be utilized accordingly; thus, one skilled in the art would unhesitatingly conceptualize that placement of the communication link into idle state takes place when the congesting situation is over) (see page 2, paragraph 32).

Although Mortensen discloses a method as described, Mortensen does not specifically disclose a method comprising placing a radio link into a busy state for the duration of an RRM algorithm's execution, whereby all other RRM algorithms are denied access to the radio link until completion of the RRM algorithm.

However, Vucetic discloses a method comprising placing a radio link into a busy state for the duration of an RRM algorithm's execution, whereby all other RRM algorithms are denied access to the radio link until completion of the RRM algorithm (i.e., from the Applicant's specification, it appears that the placing of the radio link into a busy state only applies to preventing **other algorithms from being executed**. With Vucetic disclosure in section 7.2, that **"only one of the algorithms can be active in the network at a time"**, it would have been obvious to one skilled in the art that the other algorithms would be able to be executed while the selected algorithm is active. Therefore, the network would be in the busy state when it comes to the other not-selected algorithms).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings as described to arrive at the claimed invention. A motivation for doing so would have been to provide a method wherein the algorithm becomes passive when

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the traffic and interference conditions change so that another algorithm is expected to provide better performance.

5. Claims 3-4, 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mortensen and Vucetic further in view of Applicant admitted prior art (Admission), Pub. No. US 20040209633.

Regarding claims 3 and 10, the combination discloses a method as described above (see claims 1 and 9 rejections).

Although the combination discloses a method as described, the combination does not specifically disclose a method wherein the RRM algorithms include configuring a radio link.

However, Admission discloses in the background section of a method executing algorithm makes a decision to configure or reconfigure one of the radio links (RLs) or timeslots. Upon making the decision, the algorithm signals the new configuration throughout the entire system (see paragraph 3).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to combine the teachings to arrive at the claimed invention. A motivation for doing so would have been to improve the performance of the network.

Regarding claims 4 and 11, the combination discloses a method as described above (see claim 1 rejection).

Although the combination discloses a method as described, the combination does not specifically disclose a method wherein the RRM algorithms include reconfiguring a radio link.

However, Admission discloses in the background section of a method executing algorithm makes a decision to configure or reconfigure one of the radio links (RLs) or timeslots. Upon making the decision, the algorithm signals the new configuration throughout the entire system (see paragraph 3).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to combine the teachings to arrive at the claimed invention. A motivation for doing so would have been to improve the performance of the network.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mortensen and Vucetic in further view of Lu, U.S. Patent No. 6771624.

Regarding claim 8, Mortensen discloses a method as described in claim 1 rejection (see claim 1 rejection above).

Although Vucetic discloses a method wherein the multi-algorithm channel allocation mechanism provides a significant improvement in network performance (maximize throughput) because it selects the most superior available channel allocation algorithm with respect to the actual traffic and interference conditions, the combination does not specifically disclose a method further comprising the step of ordering the subset of RRM algorithms.

However, Lu discloses a method for managing a plurality of RRM algorithm by defining algorithm priority levels before the execution process (see col. 3, lines 6-14)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine both methods to arrive at the claimed invention. A motivation to do so would have been to obtain optimum efficiency with the method (see col. 3, lines 6-8).

*Allowable Subject Matter*

7. Claims 5-6 and 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre-Louis Desir whose telephone number is (571) 272-7799. The examiner can normally be reached on Monday-Friday 8:00AM- 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on (571) 272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Pierre-Louis Desir  
06/01/2007

JEAN GELIN  
PRIMARY EXAMINER

